

Inside Wallops

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NASA's Ikhana UAV Flying Wildfire Imaging Missions

NASA and the U.S. Forest Service are testing newly developed technologies to improve wildfire imaging and mapping capabilities during the Western States Fire Mission.

From mid-August through September, 2007, NASA's Dryden Flight Research Center is flying its remotely piloted aircraft named Ikhana, a Predator B unmanned aircraft system adapted to civil missions, in a series of flights to demonstrate the capabilities of a sophisticated new thermal-infrared imaging sensor and real-time data communications equipment developed at NASA's Ames Research Center.

The sensor is capable of peering through thick smoke and haze to record hot spots and the progression of wildfires over a lengthy period. The data is overlaid on Google Earth maps and downlinked in near-real time to the Interagency Fire Center in Boise, Idaho, and made available to fire incident commanders to assist them in allocating their firefighting resources.

The first flight of the series on August 16 captured images of California wildfires, including the huge Zaca Fire in Santa Barbara and Ventura Counties. Other flights in the series were to take the aircraft to image wildfires burning in the Pacific Northwest during missions lasting more than 20 hours.

NASA's Dryden Flight Research Center acquired the Predator B unmanned aerial system in November 2006 from the aircraft's manufacturer, General Atomics Aeronautical Systems, to support Earth science missions and advanced aeronautical technology development. The aircraft also will act as a testbed to develop capabilities and technologies to improve the utility of unmanned aerial systems.

Ikhana is a Native American Choctaw word meaning intelligence, conscious or

aware. The name is descriptive of the research goals NASA has established for the aircraft and its related systems.

The aircraft, designed for long-endurance, high-altitude flight, has been modified and instrumented for use in multiple civil research roles.



NASA's Ikhana UAV

NASA Photo

NASA's Suborbital Science Program within the Science Mission Directorate is Ikhana's primary customer, using the aircraft for Earth science studies. A variety of atmospheric and remote sensing instruments, including duplicates of those sensors on orbiting satellites, can be installed to collect data during flights lasting up to 30 hours. The Suborbital Science Program uses both manned and unmanned aircraft to collect data within the Earth's atmosphere, complementing measurements of the same phenomenon taken from space and those taken on the Earth's surface.

NASA's Aeronautics Research Mission Directorate also will use the aircraft for advanced aircraft systems research and technology development. Initial experiments will look into the use of fiber optics for wing shape sensing and control and structural loads measurements.

NASA also has a ground control station and satellite communication system for

uplinking flight commands and downlinking aircraft and mission data. The ground control station is installed in a mobile trailer and, in addition to the pilot's remote "cockpit," includes computer workstations for scientists and engineers. All the aircraft systems are mobile, making Ikhana ideal for missions conducted from remote sites around the globe.

NASA's Ikhana / Predator B is 36 feet long and has a wingspan of 66 feet. More than 400 pounds of sensors can be carried internally and over 2,000 pounds in external under-wing pods. Ikhana is capable of reaching altitudes above 40,000 feet.

Wallops Shorts.....

On the Road

John Campbell, Director, NASA Wallops Flight Facility; Bruce Underwood, Chief, Advanced Projects Office; and Jay Pittman, Chief, Range and Mission Management Office, met with Admiral Thad W. Allen, Commandant of the United States Coast Guard, in Washington, D.C., on August 22.

Volunteering in Peru

Joe Ferster, Honeywell, was the mission manager for the second year in a row leading a medical team of seven American and eight Peruvians to Incawasi, Peru. From August 12 to 22 more than 650 medical patients were treated and 203 teeth extracted. Dave Lang, Northrop Grumman, was an assistant to the Peruvian doctors and participated in triage assessments. Ferster has participated in the medical mission for four years and Lang for two.



Have a safe
Labor Day
holiday!

Recreational Use of Wallops Island

Two areas of Wallops Island (WI) are open for recreational use by permanently badged Wallops employees and their escorted guests. The beach area north of the launch areas and south of the cable barrier is open.

Piping plover nesting areas that were closed during the nesting season will reopen September 1.

Recreational beach areas may be used only during non-operational hours between sunrise and sunset. Non-operational hours are normally weekends and holidays and before 7:30 a.m. and after 4:30 p.m. on weekdays. Launch and/or project activities may require additional closures during non-operational hours.

Pedestrians and off-road-vehicles (ORV) can gain access to the area by a dirt road leading to a dune crossing northeast of Camera Station V-100 on the north end of WI. This area is clearly marked and is the only authorized ORV access point. ORVs may not be driven on or over dunes or into closed sections of the beach.

The beach on the south end of WI is no longer open for recreational use. The marsh along the Virginia Inland Waterway that runs under the bridge to Wallops Island also may be used for recreational purposes. This area is accessible by boat only. Use of the area does not include the use of weapons of any type.

Beach Clean-up

The Annual Wallops Beach Clean-up on Wallops Island has been scheduled for September 15, from 9 a.m. to noon.

For more information, contact Marianne Simko at x2127.

Lunar Eclipse

Early Tuesday morning, August 28, there will be a colorful lunar eclipse visible from five continents including most of North America. Locally, the total eclipse will begin at 5:52 a.m. and ends at 7:22 a.m.

The event actually begins when the Moon enters Earth's shadow. At first, there's little change. The outskirts of Earth's shadow are as pale as the Moon itself; an onlooker might not even realize anything is happening. But as the Moon penetrates deeper, a startling metamorphosis occurs. The color of the Moon changes from moon-dust-gray to sunset-red. This is totality, and it lasts for 90 minutes.

The extreme north end of WI, the large wetland area bordered to the north by the helicopter access road and the high dunes along the Atlantic Ocean are "off limits" at all times due to the potential for unexploded ordnance/munitions from historic Department of Defense activities.

Failure to comply with restrictions for use of the WI beach will result in the closure of the Island for recreational use. Employees are requested to notify the Island gate security officer if you observe anyone in restricted areas, violating the protected areas or any wildlife habitat on the Island.

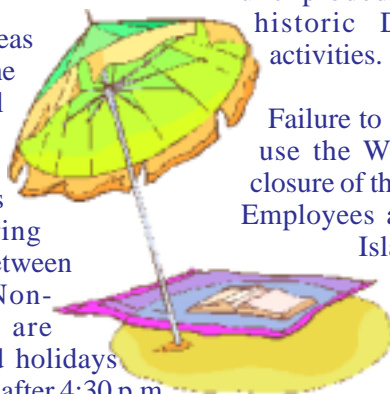
Remember:

- 1) Recreational areas are open from sunrise to sunset, non-duty hours only.
- 2) Launch areas are NEVER open for recreational use.
- 3) Maintain the natural state of the Island. Properly dispose of trash.
- 4) Open fires, pets and weapons are NOT allowed on WI.
- 5) ORV access is limited to the dune crossing near Camera Station V-100.

For a Wallops Island recreational map, contact Lisa Goga at:
Lisa.C.Goga@nasa.gov

Diversity Council Words to Live By

"We should acknowledge differences, we should greet differences, until difference makes no difference anymore."
..... Dr. Adela A. Allen



Software Intellectual Property Protection and the Software Release Process

August 29

10 a.m. - Noon

By VITS in Building F6, Room 110

Learn how to protect your software innovations and share information with contractors and other outside collaborators without compromising your work or the opportunity for future work.

This class is designed for anyone who deals with software innovation and technology development.

AETD mini course web site: http://aetd.gsfc.nasa.gov/AETD_Minicourses/index.htm

Maryland Renaissance Festival

Tickets are available at the Exchange Store, Building E-2.

Adults \$13.50

Children \$8.00

Any Saturday or Sunday between August 25 and October 21.

For opening weekend, August 25-26, all children under 11 are admitted free.

The Festival is near Annapolis in Crownsville, MD. For further information visit: <http://www.rennfest.com/>

Mandatory NASA Property Responsibility & Accountability Training

Property accountability is the responsibility of all Wallops employees. To mitigate equipment losses and improve the loss rate, all employees are required to complete the course "NASA Property Responsibility and Accountability Training" (#OTH-002-05) via SATERN by September 28.

For further information, contact Linda Wallace at x66-3244.

Inside Wallops is an official publication of Goddard Space Flight Center and is published by the Wallops Office of Public Affairs, Extension 1584, in the interest of Wallops employees. Recent and past issues of *Inside Wallops* also may be found at: <http://www.nasa.gov/centers/wallops/news/newsletters.html>

Editor

Betty Flowers